

CLAIMS:

1. An implantable tissue-stimulating device comprising:
 - a resiliently flexible elongate member having a proximal end, a distal end, and
 - 5 having at least one electrode mounted thereon;
 - a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, the lumen being able to receive a stiffening element through the orifice; and
 - a seal that is pierceable by the stiffening element but which at least substantially
 - 10 seals the lumen following removal of the stiffening element therefrom.
2. An implantable tissue-stimulating device comprising:
 - a resiliently flexible elongate member having a proximal end, a distal end, and
 - having at least one electrode mounted thereon;
 - 15 a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end;
 - a stiffening element extending through at least a portion of the lumen and out through the orifice; and
 - a seal that at least substantially seals the lumen following removal of the
 - 20 stiffening element therefrom.
3. The implantable tissue-stimulating device of claim 1 or claim 2 wherein a slit is formed in the seal.
- 25 4. The implantable tissue-stimulating device of claim 1 or claim 2 wherein the seal is formed of a silicone polymer.
5. A method of manufacturing an implantable tissue-stimulating device, the device comprising a resiliently flexible elongate member having a proximal end, a distal end
- 30 and at least one electrode mounted thereon, and a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, the method comprising the steps of:
 - (i) sealing the lumen of the elongate member with a pierceable seal; and
 - (ii) piercing the seal with a tip of a stiffening element and sliding the
 - 35 stiffening element relatively into the lumen of the elongate member.

6. A method of manufacturing an implantable tissue-stimulating device, the device comprising a resiliently flexible elongate member having a proximal end, a distal end and at least one electrode mounted thereon, and a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, the method comprising the steps of:

(i) positioning a stiffening element within a lumen of an elongate member, the stiffening element extending from within the lumen back out through an orifice of the lumen; and

(ii) sealing the orifice of the lumen of the elongate member with a seal.

7. A method of placing an implantable tissue-stimulating device in a body of an implantee, the device comprising a resiliently flexible elongate member having a proximal end, a distal end and at least one electrode mounted thereon, a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, and a seal that at least substantially seals the lumen, the method comprising the steps of:

(i) inserting the elongate member into a desired location in the body of the implantee;

(ii) during and/or after insertion of the elongate member, at least partially relatively withdrawing the stiffening element from the lumen through the seal; and

(iii) allowing the seal to at least substantially seal the lumen of the elongate member.

8. An implantable tissue-stimulating device comprising:

a resiliently flexible elongate member having a proximal end, a distal end, and having at least one electrode mounted thereon;

a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, the lumen being able to receive a stiffening element through the orifice; and

a plug member that is positionable within and seals the orifice of the lumen following withdrawal of the stiffening element therefrom.

9. A plug member that is positionable within an orifice of a lumen of an elongate member of an implantable tissue-stimulating device.

10. The plug member of claim 9 wherein the elongate member is resiliently flexible and has a proximal end, a distal end, and at least one electrode mounted thereon, the lumen extending through at least a portion of the elongate member from the orifice that is positioned at or relatively closer to the proximal end than the distal end.

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11. A method of placing an implantable tissue-stimulating device in the body of an implantee, the device comprising a resiliently flexible elongate member having a proximal end, a distal end and at least one electrode mounted thereon, and a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, the method comprising the steps of:

- (i) inserting the elongate member into a desired location in the body of the implantee;
- (ii) during and/or after insertion of the elongate member, relatively withdrawing a stiffening element from the lumen through the orifice in the member;
- and
- (iii) inserting a plug into the orifice to at least substantially seal the lumen of the elongate member.

12. An implantable tissue-stimulating device comprising:
a resiliently flexible elongate member having a proximal end, a distal end, and having at least one electrode mounted thereon;
a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end;
a stiffening element positioned at least partially within the lumen and extending out of the lumen through said orifice; and
a sealing member mountable to the stiffening element;
wherein the stiffening element is movable relative to the orifice of the lumen between a first position in which the sealing member mountable thereon does not seal the lumen and a second position in which the sealing member at least substantially seals the lumen.

13. The implantable tissue-stimulating device of claim 12 wherein the sealing member comprises a sealing portion of a resiliently flexible material mounted to the stiffening element.

14. The implantable tissue-stimulating device of claim 12 wherein the sealing member has a shape that matches the shape of a narrowing of the lumen at or adjacent the orifice thereof.

5 15. The implantable tissue-stimulating device of claim 12 wherein the sealing member comprises a substantially spherical or spherical member mounted at or relatively near the distal end of the stiffening member.

16. The implantable tissue-stimulating device of claim 15 wherein a portion of the
10 lumen adjacent the orifice thereof has a spherical region to receive the spherical member when the spherical member is in the second position.

17. The implantable tissue-stimulating device of claim 16 wherein the spherical region has a diameter less than that of the spherical member.

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18. A stiffening element that is positionable through an orifice and into a lumen of an elongate member of a tissue-stimulating device, the stiffening element comprising:
a stiffening member; and
a sealing member mountable to the stiffening member;

20 wherein the stiffening element is movable relative to the orifice of the lumen between a first position in which the sealing member mountable thereon does not seal the lumen and a second position in which the sealing member at least substantially seals the lumen.

25 19. A method of placing an implantable tissue-stimulating device in the body of an implantee, the device comprising a resiliently flexible elongate member having a proximal end, a distal end and at least one electrode mounted thereon, a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, and a stiffening element
30 positionable at least partially within the lumen and extending from the lumen through the orifice, the method comprising the steps of:

(i) inserting the elongate member into a desired location in the body of the implantee;

(ii) during and/or after insertion, at least partially relatively withdrawing the
35 stiffening element from the lumen through the orifice; and

(iii) bringing a sealing member that is mountable to the stiffening element into a position in which the sealing member at least substantially seals the lumen.

20. An implantable tissue-stimulating device comprising:

5 a resiliently flexible elongate member having a proximal end, a distal end, and having at least one electrode mounted thereon;

a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end; and

10 a compression member mountable around at least a portion of the elongate member;

wherein the compression member is adjustable between a first configuration in which the compression member does not compress a portion of the lumen and a second configuration in which the compression member does compress at least a portion of the lumen.

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21. The implantable tissue-stimulating device of claim 20 wherein the lumen is able to receive a stiffening element through the orifice thereof.

22. The implantable tissue-stimulating device of claim 20 wherein the position of
20 the compression member around the elongate member is relatively adjustable.

23. The implantable tissue-stimulating device of claim 20 wherein the compression member is only adjustable once from the first configuration to the second configuration.

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24. The implantable tissue-stimulating device of claim 20 wherein the compression member is a clip that is mountable around the elongate member, wherein on closing and latching of the clip, at least a portion of the lumen is compressed sufficiently to at least substantially seal the lumen.

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25. An implantable tissue-stimulating device comprising:

a resiliently flexible elongate member having a proximal end, a distal end, and having at least one electrode mounted thereon; and

35 a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, said lumen being able to receive a stiffening element through the orifice;

wherein the lumen has at least one first portion of a first diameter and at least one second portion having a diameter less than that of said at least one first portion;

wherein said second portion is relatively closer to the orifice of the lumen than at least one of said first lumen portions.

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26. The implantable tissue-stimulating device of claim 25 wherein the second portion is spaced from the orifice of the lumen by at least one first portion.

27. The implantable tissue-stimulating device of claim 25 wherein the second
10 portion is compressible by a compression member that is mountable around the elongate member, wherein the compression member is adjustable between a first configuration in which the compression member does not compress the second portion of the lumen and a second configuration in which the compression member does compress said second portion.

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28. The implantable tissue-stimulating device of claim 25 wherein a quantity of adhesive is insertable through the orifice of the lumen, said adhesive on subsequent curing sealing the lumen.

20 29. The implantable tissue-stimulating device of claim 25 wherein at least the second portion of the lumen is coated with a material that swells on contact with at least certain fluids.

30. An implantable tissue-stimulating device comprising:
25 a resiliently flexible elongate member having a proximal end, a distal end, and having at least one electrode mounted thereon; and
a lumen extending through at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, said lumen being able to receive a stiffening element through the orifice;
30 wherein at least a portion of the lumen is coated with a layer of material that swells following exposure to bodily fluids.

31. An implantable tissue-stimulating device comprising:
a resiliently flexible elongate member having a proximal end, a distal end, and
35 having at least one electrode mounted thereon; and

a lumen extending into and along at least a portion of the elongate member from an orifice positioned at or relatively closer to the proximal end than the distal end, said lumen being able to receive a stiffening element through the orifice;

wherein the lumen in the region adjacent the orifice decreases in diameter away
5 from the orifice into the elongate member for a length.

32. The implantable tissue-stimulating device of claim 31 wherein said region of the lumen is frusto-conical in form.

10 33. The implantable tissue-stimulating device of claim 31 wherein said region is packable with fibrous tissue following withdrawal of the stiffening element.